

**FAMILY SATISFACTION AS A MODERATOR OF THE RELATIONSHIP  
BETWEEN FAMILY WEIGHT ENVIRONMENT AND BODY  
DISSATISFACTION**

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# TABLE OF CONTENTS

	Page
ABSTRACT.....	1
ACKNOWLEDGEMENTS.....	2
NOMENCLATURE .....	3
LIST OF TABLES.....	4
CHAPTER	
I INTRODUCTION .....	5
II METHODS .....	12
Participants.....	12
Procedure .....	12
Measures .....	13
III RESULTS .....	15
Descriptive Statistics.....	15
Questionnaires and ANOVA Analysis by Gender.....	15
Questionnaire Correlations .....	15
IV DISCUSSION.....	17
Gender Differences in Questionnaire Scores.....	17
Correlations of Variables .....	18
Limitations .....	21
Future Research .....	21
Conclusions.....	22
REFERENCES .....	23

## **ABSTRACT**

### **Family Satisfaction as a Moderator of the Relationship between Family Weight Environment and Body Dissatisfaction**

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Previous studies have established that family weight environment and family functioning are related to child weight perceptions, body dissatisfaction and disordered eating. However, few studies have studied the relationship between body dissatisfaction and both family weight environment and family satisfaction. The current study investigates the potential moderating role of family satisfaction in the relationship between family weight environment and body dissatisfaction. College students between the ages of 18 and 22 ( $M = 18.91$ ,  $SD = 1.00$ ) enrolled in an introductory psychology course at Texas A&M University completed online questionnaires for course credit. Correlational analyses revealed no relationship between family satisfaction and body dissatisfaction, therefore moderation by family satisfaction was not present in the relationship between family weight environment and body dissatisfaction. However, interesting gender differences were found for drive for muscularity and weight teasing.

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## NOMENCLATURE

AN	Anorexia Nervosa
BED	Binge Eating Disorder
BN	Bulimia Nervosa
BMI	Body Mass Index
DMS	Drive for Muscularity Scale
EAT-26	Eating Attitudes Test-26
EDI	Eating Disorder Inventory
OBCS	Objectified Body Consciousness Scale

## LIST OF TABLES

Tables		Page
1	Descriptive Statistics.....	27
2	Mean Values of Questionnaire Measures.....	28
3	ONE-Way ANOVA by Gender.....	29
4	Correlations for Family Satisfaction, Family Weight Environment, Family Weight Teasing, Body Shame, and Drive for Muscularity.....	30

# **CHAPTER I**

## **INTRODUCTION**

The prevalence rates of anorexia nervosa (AN), bulimia nervosa (BN), and binge eating disorder (BED) among young females are approximately 0.4%, 1.0-1.5%, and 1.6%, respectively (Hoek & Hans Wijbrand, 2006; Smink & Hoek, 2012; Hudson et al., 2007). Among males the rates of AN, BN, and BED are 0.1-0.3%, 0.3-0.5%, and 0.4-0.8% (Smink, van Hoeken & Hoek, 2012; Smink, van Hoeken & Hoek, 2013), though male eating disorders are likely under-diagnosed due to a lack of male-specific assessment instruments and a culture that discourages male vulnerability (Raevuori, Keski-Rahkonen, & Hoek, 2014; Strother et al., 2012). Males are also less frequently studied than females in the realm of disordered eating, weight perception and body dissatisfaction. Despite the low percentages of formal eating disorder diagnoses, surveys on college campuses revealed that 25% of college-aged women engaged in bingeing and purging to control their weight, 22% dieted “often” or “always” (Wade, Keski-Rahkonen, & Hudson, 2011), and in a survey of 185 females on a college campus, 83% dieted for weight loss, of which 44% were a normal weight (Malinauskas et al., 2006). These numbers suggest a much greater prevalence of sub-clinical eating disorder symptomatology in the adolescent and young adult population.

A key diagnostic element of eating disorders and disordered eating is body dissatisfaction. Body dissatisfaction is the negative subjective evaluation of one’s body size, shape, or specific body parts (Presnell et al., 2004). Males and females often fall victim to body dissatisfaction when they internalize the shape ideals of society and recognize that their bodies do not match these

ideals (Bearman et al., 2006). For females, the emphasis is on physical attractiveness and thinness; for males, the ideal body is a muscular build. When the cultural pressures of Western society, and the preoccupation and emotional distress associated with appearance combine, body dissatisfaction often manifests itself in the form of body shame and a drive for muscularity.

Body shame often originates from self-objectification, a process in which individuals view themselves as objects whose value is based on appearance. When those individuals compare themselves to internalized societal body ideals, their perceptions of themselves do not match these ideals (Noil & Fredrickson, 1998). The cultural norms paint overweight individuals as being lazy and lacking self-control. Consequently, women consider eating foods high in calories as bad or sinful and dieting as good. In theory, body shame becomes a moral emotion, which amplifies the emotional burden when failure occurs. However, Noil & Fredrickson (1998) predict that it is not body shame itself that leads to dieting, but the anticipation of body shame. Individuals may be satisfied with their weight and appearance, but they engage in disordered eating as a way of avoiding body shame. Indeed, the construct of body shame is a significant predictor of disordered eating behavior using the OBCS and EAT-26 (Mustapic et al., 2016).

Body dissatisfaction has been recognized to present differently in males and females (Braun et al., 1999; Raevuori, Keski-Rahkonen, & Hoek, 2014). Males are more likely to report body dissatisfaction in the form of a drive for muscularity and females are more likely to report a drive for thinness (McCreary & Sasse, 2000). Drive for muscularity is defined as concerns regarding muscularity, satisfaction with muscle mass, and attempts to increase muscle. Due to stereotyping in Western societies, muscularity is now associated with masculinity. Males with a high drive for



muscularity experience low self-esteem and higher levels of depression, but in females that same relationship has not been found (McCreary & Sasse, 2000). In females, body dissatisfaction manifests physically by participation in extreme dieting plans, intense cardiovascular exercise, or purging. Males are more likely to binge eat without purging and use anabolic androgenic steroids. Anabolic steroids have well-documented health effects such as heart disease and Type 2 diabetes. The addition of the drive for muscularity scale (DMS) in the current study seeks to account for some of the differences in body dissatisfaction presentation between males and females.

The increase in eating disorder symptomatology in the last few decades has led to an increase in research focused on the various etiological factors, especially familial factors. Studies have indicated an association of parental weight talk with dieting, unhealthy weight-control behaviors, and binge eating in girls (Berge et al., 2013; Neumark-Sztainer et al., 2010). Under no circumstance in the Neumark-Sztainer et al. (2010) study was family weight talk associated with positive outcomes in girls. Mothers dieting, mothers talking about their own weight, and mothers encouraging their daughters to diet were all associated with greater use of unhealthy and extreme weight control behaviors. Fathers dieting was not significantly associated with any negative outcomes, but fathers talking about their own weight and fathers encouraging their daughters to diet resulted in unhealthy and extreme weight control behaviors. An additional example of family weight talk includes parents commenting on others' weight (Bauer, Bucchianeri, & Neumark-Sztainer, 2013).

Family weight teasing, another facet of family weight environment, has also been linked with body dissatisfaction and disordered eating in girls (Gross & Nelson, 2000; Keel et al., 1997; Neumark-Sztainer et al., 2010). The findings of Neumark-Sztainer et al. (2010) indicated family weight teasing was the strongest and most consistent factor correlating with body dissatisfaction, disordered eating, and problematic weight status. 58% of the adolescent girls surveyed reported being teased about their weight by family members in the past year and those who were teased most often were ten times more likely to binge eat as compared to those who were not subjected to family weight teasing. Furthermore, researchers have correlated family weight teasing with higher BMI values and weight gain (Hanna & Bond, 2006; Neumark-Sztainer et al., 2010). Numerous studies also show that daughters are more likely to have body dissatisfaction and use extreme weight control behaviors when mothers specifically engaged in weight teasing (Keel et al., 1997; Neumark-Sztainer et al., 2010). Additionally, Gross & Nelson (2000) found that college women with low scores on the EDI reported receiving positive verbal messages from their mothers about eating and weight concerns. Therefore, there is conflicting evidence regarding the role of positive communication about eating concerns and its impact on eating disorder development.

Aside from studies linking family weight teasing with the aforementioned outcomes, less research has looked at how teasing impacts the specific facets of body shame and drive for muscularity. Body shame is positively correlated with appearance-related teasing in both males and females (Lindberg, 2006). One study of undergraduate females failed to find an association between body image and appearance-related teasing (Markham, 2005), but this study appeared to be an exception to the more commonly found results. Mothers', fathers', and siblings'

appearance-related teasing has also been significantly associated with boys' drive for muscularity (Schaefer, 2014).

Familial relationships outside of the weight-related environment have been shown to affect body dissatisfaction. When a girl's relationship with her parents is conflict-ridden and less warm, she is more likely to diet and have poorer body image (Archibald, 1999). Other family qualities associated with body dissatisfaction include high levels of reported parental psychological control and lack of quality parental support (Soenens et al., 2008; Bearman et al., 2006). Parental psychological control has been tied to maladaptive perfectionism, a trait associated with both body dissatisfaction and disordered eating. Girls with eating disorders and body dissatisfaction also report poorer communication with both parents, feel less accepted by parents, and are more criticized by their parents (Waller et al., 1988; Calam et al., 1990). Both adolescent males and females are more likely to have body dissatisfaction, low self-esteem, and depression when they have a negative perception of the parent-child relationship (Ackard et al., 2006). Lastly, researchers found general family connectedness to be associated with higher levels of body dissatisfaction, and that family connectedness served as a protective agent against body dissatisfaction (Fulkerson et al., 2007; Resnick et al., 1993). Little research has focused on the link between body dissatisfaction and family satisfaction specifically. The current study will focus on family satisfaction to enhance the understanding of the family's role in body dissatisfaction.

Two studies have examined the mediating role of negative messages from parents about weight and shape in the relationship between family dysfunction and disordered eating (Hanna & Bond,

2006; Kluck, 2008). Hanna & Bond (2006) reported that negative parental messages fully accounted for family conflict's harmful effect on body dissatisfaction, drive for thinness, and bulimic symptoms in a sample of university women. In the group of secondary females, negative parental messages mediated the relationship between family dysfunction and body dissatisfaction and bulimic symptoms. However, in the group of secondary students there was no mediation evident for drive for thinness because of the lack of relationship with family conflict. According to the researchers, developmental differences in eating disorder symptoms may account for this anomaly. Kluck (2008) similarly found that negative family food-related experiences fully accounted for the relationship between family dysfunction and disordered eating. Both articles support the theory that, in the absence of negative family weight and food-related messages, there may be no causal relationship between family dysfunction and disordered eating. Kluck (2008) suggests a dysfunctional family atmosphere may increase the likelihood of negative family messages about food, which would then lead to disordered eating development.

With the exception of the studies by Hanna & Bond (2006) and Kluck (2008), family food-related experiences and family dysfunction's relationships with body dissatisfaction have only been studied separately. The current study builds upon these mediation findings to examine whether family satisfaction impacts the findings that poor family weight environment is associated with body dissatisfaction.

The current study has (2) objectives: (1) To establish the significant relationships found in past studies between family weight environment/weight teasing and body dissatisfaction (Gross & Nelson, 2000; Keel et al., 1997; Neumark-Sztainer et al., 2010). Two specific facets of body

dissatisfaction will be examined in the current study: body shame and drive for muscularity, (2)

To investigate the possible moderating role of family satisfaction in the relationship of the aforementioned objective. It is hypothesized for objective (1) negative family weight environment and weight teasing will predict greater body shame and a higher drive for muscularity. For objective (2) it is hypothesized that family satisfaction will moderate the relationship in objective (1), with lower levels of satisfaction augmenting this relationship.

## CHAPTER II

### METHODS

#### Participants

All participants were recruited through the Texas A&M University SONA system. Participants had to be between the ages of 18-22 years old to be eligible for the study. A total of 102 students (Male = 29, Female = 73) participated in the study. Participants' ages ranged from 19-22 ( $M = 18.91$ ,  $SD = 1.00$ ). Over half of the participants identified as being a Freshman (66%), 22% as a Sophomore, 3% as a Junior, and 9% as a Senior or higher. The majority of participants classified themselves as Caucasian (82%), followed by Asian (12%), American Indian or Alaska Native (3%) and Black or African American (3%).

#### Procedure

Participants completed an online survey including the following scales: The Family Satisfaction Scale, the Dianne Neumark-Sztainer Family Weight Environment Scale, the OBCS, the DMS, and the EAT-26. Additionally, participants were asked to provide demographic information including gender, age, grade, race, height, and weight. After participants signed up for the study through SONA, they were instructed to click a hyperlink that led them to the survey in the Qualtrics System. After completion of the survey, participants received credit for their introductory psychology course.

## **Measures**

Family satisfaction was measured using the Family Satisfaction Scale (Olson, Gorall, Tiesel, 2004). The Family Satisfaction Scale is an adjunct measure to the Family Adaptability and Cohesion Scale IV (FACES IV). The Family Satisfaction Scale is a 10 item measure addressing family members' satisfaction with family cohesion, flexibility, and communication.

Family Weight Environment was measured using questions developed by Dianne Neumark-Sztainer. Participants were asked to report if their parents encourage them to diet, if their parents talk about their weight, and if their parents diet to lose weight or keep them from gaining weight. Additionally, participants reported if family members had teased them because of their weight in the past year (Neumark-Sztainer et al., 2010).

Body Dissatisfaction was measured using the Objectified Body Consciousness Scale (OBCS) and the Drive for Muscularity Scale (DMS). The OBCS is a 24-item self-report measure comprised of three subscales: Body Surveillance, Body Shame, and Appearance Control Beliefs. Of the three subscales, only the Body Shame subscale was used in the current study. The Body Shame subscale assesses the extent to which a person believes they are a bad person because they do not meet society's standard of the ideal body (McKinley & Hyde, 1996). The DMS is a 15-item self-report questionnaire designed to measure the attitudes and behaviors that denote the level of concern an individual has with increasing his/her muscularity (McCreary & Sasse, 2000).

In addition to height and weight, basic demographical information was collected. The demographics gathered included gender, age, grade, and race.



## CHAPTER III

### RESULTS

#### Descriptive Statistics

Descriptive statistics for the participants are available in Table 1. The majority of the participants were female (68.9%), freshman (63.2%), and white (83%).

#### Questionnaires and ANOVA Analysis by Gender

Table 2 contains means, standard deviations and ranges for the questionnaires utilized in the current study and Table 3 presents the results from the ANOVA by gender that was run to assess differences in scores on the questionnaires. Significant differences were found between males and females for the Drive for Muscularity scale,  $F(1,93) = 43.487, p < .01$  and the Family Weight Teasing scale,  $F(1,98) = 3.995, p < .05$ . Females ( $M = 73.985, SD = 12.149$ ) reported higher drive for muscularity than males ( $M = 52.308, SD = 18.772$ ), while males ( $M = 1.78, SD = .847$ ) reported more family weight teasing than females ( $M = 1.42, SD = .783$ ).

#### Questionnaire Correlations

The correlation matrix for the dependent, predictor and potential moderating variables is presented in Table 4. The Pearson correlations were calculated to test for associations of the predictor variables with the body dissatisfaction variables. As can be seen in Table 4, the Family Weight Environment scale was positively correlated with the Family Weight Teasing scale,  $r = .354, p < .01$  and the Objectified Body Consciousness Body Shame subscale,  $r = .415, p < .01$ . Family weight teasing was negatively associated with drive for muscularity,  $r = -.253,$

$p < .05$ , and positively related to body shame,  $r = .233$ ,  $p < .05$  and family weight teasing. Since the hypothesized moderating variable, family satisfaction, did not correlate with any of the outcome variables moderation analyses were not conducted.

## **CHAPTER IV**

### **DISCUSSION**

While previous research has established the mediating role of negative weight messages from parents in the relationship between family dysfunction and body dissatisfaction (Hanna & Bond, 2006), the current study is the first to investigate the moderating role of family satisfaction in the relationship between family weight environment/weight teasing and body dissatisfaction. Before performing any moderation analyses, the relationships between each of the variables were examined to determine if the results reinforced previous research. The correlations between the moderating variable, family satisfaction, and the two body dissatisfaction dimensions were not significant, so there was no moderation.

#### **Gender Differences in Questionnaire Scores**

Significant differences in scores between males and females were found for the Drive for Muscularity scale and the Family Weight Teasing scale. In contrast to several studies (e.g. Neighbors & Sobal, 2007; McCreary et al., 2004; Kelley, Neufeld & Musher-Eizenman, 2010), in the current study females reported higher scores for drive for muscularity than males. This finding seems to contradict the idea that females are more likely to experience a drive for thinness and males are more likely to experience a drive for muscularity. However, Kelley et al. (2010) suggests that the constructs of drive for thinness and drive for muscularity may not be mutually exclusive. In contrast, this study suggests the hypothesis that women can experience both a high drive for thinness and a high drive for muscularity. Considering females experience more body dissatisfaction (Bearman et al., 2006), it is important to consider whether they are

able to experience multiple dimensions of the construct simultaneously. Additionally, studies have identified that a subset of females develop a drive for muscularity and a subset of males develop a drive for thinness (Kelley et al., 2010). The current study may have disproportionately sampled females who fall within that subset.

When differences between scores on the Family Weight Teasing scale were assessed, it was found that males scored significantly higher than females. Therefore, males reported higher scores in response to a question asking if they had been teased by a family member about their weight in the past year. These results contradict past research findings that suggested females report more weight teasing by family members (Neumark-Sztainer et al., 2002; Ata, Ludden, & Lally, 2007). The surprising results could have occurred for a variety of reasons. There is little previous research on why this may have occurred but some confounding factors may include family size, make-up of the family, or cultural emphasis on male body-image. In addition, the sample size of males in the current study was low which may have given more strength to any outliers.

### **Correlations of Variables**

Only portions of the proposed hypothesis concerning family weight environment's and family weight teasing's relation to body dissatisfaction were supported by the results. The positive correlation of family weight environment with body shame supports our hypothesis. When in a family environment that consistently reinforces the importance of weight and physical appearance, males and females are more likely to self-objectify and view their importance only in terms of appearance. In these types of environments where parents are commenting on their

own weights and the weights of their children, it is likely that the parents are emphasizing the importance of cultural body standards. When the son or daughter realizes they do not meet this ideal, or their parent(s) suggests they do not, the disconnect between perceived current body and ideal body may lead to body shame.

Drive for muscularity was not related to family weight environment. No research has been conducted on the relationship between the broad category of family weight environment and drive for muscularity in males or females, but ordinarily family weight environment is positively correlated with body dissatisfaction (Rogers, Paxton & Chabrol, 2009). Since the Family Weight Environment scale contains items pertaining to dieting and weight loss in the family (Neumark-Sztainer, 2010), the content of the measure could have accounted for the lack of relationship. The family weight environment described in the questionnaire promotes the thin body ideal and makes no mention of parents encouraging a muscular physique. If the questionnaire would have included additional items assessing whether or not parents encourage their children to increase muscle mass, this relationship may have been more evident. Development of measures that place emphasis on facets of body dissatisfaction, beyond drive for thinness, may assist in exploring this relationship further.

Family weight teasing was also significantly correlated with body shame. This finding was not surprising based on reports from Neumark-Sztainer et al. (2010) which found that family teasing was the strongest and most consistent factor correlating with body dissatisfaction. Even more so than with family weight environment, family weight teasing creates an appearance-focused atmosphere where value is placed heavily on weight and body shape. Offspring of parents who

weight tease may be more aware and worried about their physical appearance and whether their appearance measures up to the family's standards (Kluck, 2010). This disconnect between the family's standards and the child's perception of themselves can lead to body shame. It may be that parents emphasize physical attractiveness and encourage their children to diet because of their own body dissatisfaction. The mother has the strongest effect on creating a physical appearance-focused environment, but fathers also contribute to the situation (Kluck, 2010).

Drive for muscularity was also related to family weight teasing, but the relationship was negative. In other words, more family weight teasing was associated with a lower drive for muscularity. In boys, mothers' and fathers' appearance-related teasing has been significantly associated with boys' drive for muscularity (Schaefer, 2014), but there has been no research on appearance-related teasing and drive for muscularity in girls. The discrepancy in findings could be related to differences in the wording of the teasing constructs. Weight teasing refers to teasing about a number on the scale. In contrast, appearance-related teasing occurs when an individual is teased about their outward physical appearance. Appearance-related teasing might be more likely to be associated with drive for muscularity because being muscular is an external physical attribute. Furthermore, weight teasing occurs more often in overweight youth than among normal weight youth (Goldfield et al., 2010), so weight teasing does not typically take the form of parents teasing their children about being too small. If parents did tease their children about being too small and encouraged them to gain weight, then there may be a relationship between family weight teasing and drive for muscularity.

## **Limitations**

Certain limitations need to be considered when interpreting the results of this study. The current study had a disproportionately female sample. Future studies could enhance the robustness of the findings if more males were sampled, as certain anomalies found in the current study in regards to gender might disappear with a proportionate sample. Additionally, the current study measured weight teasing using only one question, which limited the validity of the measure and of the findings. In future research, it would be beneficial to implement a multiple-item family weight teasing scale. Also, the stipulation requiring weight teasing to have occurred in the past year may have limited the results of the current study. Many college students see their parents less often after high school and would therefore not be as likely to be exposed to weight teasing. Future studies may find it more fitting to ask college samples if weight teasing occurred during adolescence. A final concern is the correlational design of the study. Future studies should be constructed to enable the ability to draw causal inferences.

## **Future Research**

Future research should seek to investigate the role of other aspects of family functioning in the relationship between family weight environment and body dissatisfaction. While family satisfaction specifically may not moderate the relationship, other variables such as family communication, family cohesion, or family disengagement may be significant moderators. Additionally, males and females should be looked at separately when testing for moderation in the current study. It is possible that family satisfaction, or one of the other family functioning variables, may moderate the relationship in only one gender and not when males and females are examined together.

## **Conclusions**

The current study found that family satisfaction does not seem to influence the relationship between body dissatisfaction and family weight environment. However, significant findings linking family weight environment with body shame, and family weight teasing with body shame and drive for muscularity were found. These results reinforce the importance of educating parents on the harmful effects of parental weight talk and weight teasing. In addition, the current study is one of the only studies to find that females report a higher drive for muscularity than males and that males report more weight teasing than females. More research is needed to determine if the anomalies are replicable or if they are products of a specific subgroup of people or a specific sample.



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Table 1.

*Descriptive Statistics*

	N	Percentage
Gender		
Female	73	68.9%
Male	29	27.4%
Grade		
Freshman	67	63.2%
Sophomore	22	20.8%
Junior	3	3.0%
Senior or higher	9	8.9%
Race		
American Indian or Alaskan Native	3	2.8%
Asian	12	11.3%
Black or African American	3	2.8%
White	83	78.3%

Table 2.

*Mean Values of Questionnaire Measures*

Measure	Mean	SD	Range
FSSTotal	34.708	8.460	10-50
FWETotal	12.062	4.0973	6-23
FWE7	1.52	.813	1-4
OBCS	23.887	9.0725	8-48
DMSTotal	67.989	17.207	15-90

Note. FSSTotal = measure of family satisfaction, FWETotal = measure of family weight environment, FWE7 = measure of weight teasing, OBCS = measure of body shame, DMSTotal = measure of drive for muscularity

Table 3.

*ONE-Way ANOVA by Gender*

	F ( <i>df</i> )	<i>p</i>
OBCS Total	2.591 (1,96)	0.111
DMS Total	43.487 (1,93)	0.000**
FWE Total	2.202(1,96)	0.141
Weight Teasing	3.995 (1,98)	0.048*

Note. \*\*. F is significant at the  $p < 0.01$  level (2-tailed). \*. F is significant at the 0.05 level (2-tailed).

Table 4.

*Correlations for Family Satisfaction, Family Weight Environment, Family Weight Teasing, Body Shame, and Drive for Muscularity*

Variable		1	2	3	4	5
1. Family Satisfaction	<i>r</i>					
	<i>p</i>					
2. Family Weight Environment	<i>r</i>	.165				
	<i>p</i>	.112				
3. Family Weight Teasing	<i>r</i>	-.064	.354**			
	<i>p</i>	.534	.000			
4. Body Shame	<i>r</i>	.054	.415**	.233*		
	<i>p</i>	.605	.000	.022		
5. Drive for Muscularity	<i>r</i>	.142	-.021	-2.53*	-.024	
	<i>p</i>	.180	.844	.014	.821	

Note. \*\*. Correlation is significant at the  $p < 0.01$  level (2-tailed). \*. Correlation is significant at the 0.05 level (2-tailed).